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# Active learning in an apparel production management course: Student perceptions, instructor training, and learning outcomes

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*Project description and rationale.* Traditionally, apparel production management courses have been instructor-centered lectures with limited or no interaction between the instructor and the students during lectures. Students use rote memorization of the lecture content to take tests which measure their level of knowledge on the content. This type of passive learning does not engage the student in the learning process so deep understanding of the content is harder to achieve (Lumpkin, Achen, & Dodd, 2015). Prior studies have shown active learning environments to be successful as it allows students to control their own learning, engage in peer-to-peer discussions, and interact with their instructor while performing simulated industry tasks (Lumpkin et al., 2015; Rowley, Jensen, & Rowley, 2005). Therefore, this study investigated student's perceptions of active learning assignments in terms of (1) class format, (2) depth of knowledge, (3) industry relevance, (4) engagement, and (5) peer-to-peer interaction, over two terms. As the course was assigned to a different instructor for the second term, we will investigate what effect, if any, did instructor training have on student perceptions of active learning. Lastly, we investigated if learning outcomes changed with active learning assignments.

*Project implementation.* Ten assignments incorporating cooperative, case study, and problem-solving techniques were developed by the instructor to mimic various industry tasks, see Table 1. These assignments were integrated into a lower division apparel production management class where it reinforced course concepts. Prior to attending class, students read course materials and took a quiz so they are prepared for each assignment. Instructor provided instructions in class and students worked in peer teams to complete the assignments while the instructor walked around class to answer questions and engage students, if necessary. At the end of class, a recap engaged all groups so the entire class could benefit from the knowledge gained in all groups. Both instructors had taught this course more than once in prior terms. Instructor A had taken educational courses and university training specific to active learning environments while Instructor B had limited experience and training in active learning environments.

*Assessment.* An anonymous survey with seven 5-point (1=strongly disagree to 5=strongly agree) questions were distributed to the students. A total of 60 students (75% response rate) completed the survey. Descriptive statistics revealed that students agreed that the (1) class format ($M$=4.15) work well for them, (2) they had an increased depth of knowledge of the course content ($M$=4.27), (3) assignments had industry relevance ($M$=4.38), (4) they felt engaged ($M$=3.97), and (5) peer-to-peer interaction improved their learning experience ($M$=4.25). Next, an independent-samples t-test was conducted to compare student perceptions of active learning for Instructor A and Instructor B. There was a significant difference in ratings for all areas; class format [$t(58)=3.880$, $p< .001$], depth of knowledge [$t(58)=4.548$, $p< .001$], industry relevance [$t(58)=3.252$, $p< .005$], engagement [$t(58)=4.300$, $p< .001$], and peer-to-peer interaction [$t(58)$

=2.723, $p < .01$]. The magnitude of the difference in the means was large for all areas; class format ($\eta^2$=.206), depth of knowledge ($\eta^2$=.263), industry relevance ($\eta^2$=.154), engagement ($\eta^2$=.242), and peer-to-peer interaction ($\eta^2$=.113). Students rated Instructor A significantly higher than Instructor B in class format ($M_A$=4.41 vs. $M_B$=3.75), depth of knowledge ($M_A$=4.61 vs. $M_B$=3.75), industry relevance ($M_A$=4.60 vs. $M_B$=4.04), engagement ($M_A$=4.36 vs. $M_B$=3.38), and peer-to-peer interaction ($M_A$=4.53 vs. $M_B$=3.83). A one-way ANOVA was conducted to explore if a change in learning outcomes with active learning had occurred when compared to prior terms with no active learning. There was no statistical significance in learning outcomes with active learning [$F$ (3,163) = 1.29, $p$ = 2.79]. The differences between the mean scores ($M_{Active}$=88.81 vs. $M_{Nonactive}$=88.28) was very small, with the effect size, calculated using eta squared, being .02.

*Conclusion.* An active learning environment worked well as a class format for the apparel production management course. Students were engaged in class material and able to understand its application to the apparel industry while gaining an increased depth of knowledge for the course content. Peer-to-peer interaction improved their learning experience in class as they shared knowledge when completing the assignment. Instructor training in active learning did have an impact on students' perceptions of active learning so additional training may increase student perceptions. Learning outcomes did not increase but mean scores of 88 are acceptable.

Table 1.
Active Learning Assignments

| Assignment | Type | Content |
|---|---|---|
| Online Apparel | Cooperative | Perceived Quality Ques, Target Marketing |
| Exploited Labor | Case-Study | Social Corporate Responsibility, Global Sources |
| Generation Z | Cooperative | Market Segmentation, Target Market Research |
| My Garment | Cooperative | Labeling Compliance, Production Sourcing |
| Apparel Sizing | Cooperative | Body Measurements, ASTM, Vanity Sizing |
| Garment Analysis | Individual | Aesthetic vs. Functional, Apparel Categories, Price Classification, Quality Analysis |
| Online Shopping Disasters | Cooperative and Problem-solving | Elements of Fit, Body Anatomy, Textiles |
| Making A Profit at Market | Cooperative and Problem-solving | Added Value, Price Classification, Market Segmentation, Fashion Careers |
| MAGIC Tradeshow | Cooperative and Problem-solving | Material Sourcing, Textiles, Apparel Closures, Added Value, Fashion Careers |
| Jeans & Shirts | Cooperative | Seam & Stitches Classifications, Threads & Needles, Fashion Careers |

Lumpkin, A., Achen, R. M., & Dodd, R. (2015). Student perceptions of active learning. *College Student Journal, 49*(1), 121-133.

Rowley, M. L., Jensen, J. W., & Rowley, J. (2005). A longitudinal study of active learning in family and consumer sciences classrooms. *Journal of Family and Consumer Sciences Education, 23*(1), 37-46.